

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed May 12, 2009. At the time of the Office Action, Claims 1-15 were pending in this Application. Claims 1-15 were rejected. Claims 1-6, 8-9, 11, and 13-14 are herein amended. Applicants respectfully request reconsideration and favorable action in this case.

Claim Objections

Claims 1-5, 9 and 13-14 were objected due to the recitation of certain phrases, which the Examiner recommended be replaced with alternative language. Applicants have amended Claims 1-5, 9 and 13-14 accordingly.

Rejections under 35 U.S.C. § 101

Claims 1-10 were rejected by the Examiner under 35 U.S.C. §101, because the claimed invention is directed to non-statutory subject matter. Applicants amend independent Claims 1 and 6 to overcome these rejections and respectfully request full allowance of Claims 1-10 as amended.

Rejections under 35 U.S.C. § 112

Claims 1-13 were rejected by the Examiner under 35 U.S.C. §112, second paragraph, as being indefinite and failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

First, regarding Claims 1, 6, and 11, the Examiner alleges that “a signal-value-range *multiplex* output” is vague and indefinite. (Office Action, page 5). Applicants submit that one of ordinary skill in the art would understand this term, particularly in light of the specification, which clearly defines the term in the Background (paragraphs 0003 and 0004) and further in the Detailed Description (see, e.g., paragraph 0014), as a sensor having two different outputs that are multiplexed. However, to eliminate any possible confusion, Applicants have amended independent Claims 1, 6, and 11 to recite “a signal-value-range multiplex output type sensor having at least two different outputs that are multiplexed.” Accordingly, Applicants respectfully request that this rejection be withdrawn.

Second, regarding Claims 2, 7, and 12, the Examiner alleges that the phrase “close in time” has not clearly been defined, and thus interprets the phrase “close in time” to mean “right after.” Applicants agree to such interpretation. Accordingly, Applicants respectfully request that this rejection be withdrawn.

Third, regarding Claims 3, 8, and 13, the Examiner interprets the limitation “otherwise the sensor not having a signal-value-range multiplex output for the measuring signal” as “otherwise the sensor not having a signal-value-range multiplex output for the measuring signal *will be recognized*.” Applicants agree with this interpretation, and have amended the claims accordingly. Thus, Applicants respectfully request that this rejection be withdrawn.

Rejections under 35 U.S.C. §103

Claims 1-2, 6-7 and 11-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0225505 filed by Chul-Soo Yook (“*Yook*”) in view of U.S. Patent No. 6,633,828 issued to Dave Faymon et al. (“*Faymon*”).

Claims 3, 8 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Yook* in view of *Faymon* as applied to claims 1, 6 and 11 above, and further in view of U.S. Patent No. 6,076,504 issued to Jonathan Stavnheim et al. (“*Stavnheim*”).

Claims 4-5, 9-10 and 14-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Yook* in view of *Faymon* as applied to claims 1 above, and further in view of U.S. Patent Application Publication No. 2003/0136173 filed by David Elenich et al. (“*Elenich*”).

Applicants respectfully traverse and submit the cited art combinations, even if proper, which Applicants do not concede, do not render the claimed embodiment of the invention obvious.

In order to establish a prima facie case of obviousness, the references cited by the Examiner must disclose all claimed limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Even if each limitation is disclosed in a combination of references, however, a claim composed of several elements is not proved obvious merely by

demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). Rather, the Examiner must identify an apparent reason to combine the known elements in the fashion claimed. *Id.* “Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.*, citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Finally, the reason must be free of the distortion caused by hindsight bias and may not rely on ex post reasoning. *KSR*, 127 S.Ct. at 1742. In addition, evidence that such a combination was uniquely challenging or difficult tends to show that a claim was not obvious. *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc. and Mattel, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007), citing *KSR*, 127 S.Ct. at 1741.

Although Applicants do not agree that the proposed combination of *Yook* and *Faymon* teaches Applicants’ claimed invention as previously presented, Applicants have amended independent Claims 1, 6, and 11 to more clearly distinguish from the cited references. Accordingly, Applicants respectfully submit that *Yook* and *Faymon* do not teach all of the elements of Applicants’ claims, as amended. For example, amended Claim 1 recites in part:

determining whether the sensor is (a) a signal-value-range multiplex output type sensor having at least two different outputs that are multiplexed, or (b) not a signal-value-range multiplex output type sensor having at least two different outputs that are multiplexed, including:

recognizing the sensor as a signal-value-range multiplex output type sensor if the first and second conditions have been met, then a sensor having a signal-value-range multiplex output for the measuring signal will be recognized, and

recognizing the sensor as not a signal-value-range multiplex output type sensor if at least one of the conditions has not been met.

Independent Claims 6 and 11 have been amended to recite similar limitations.

Yook and *Faymon* do not teach these limitations. *Yook* teaches a method and system for determining whether a rear oxygen sensor has failed. The rear oxygen sensor is

determined to have failed if the difference between a maximum output value and a minimum value of the rear oxygen sensor is less than a first value. If the rear oxygen sensor has not failed, it is determined whether the difference between the maximum output value and a minimum value of the rear oxygen sensor is between the first value and a second value. If so, an air/fuel mixture is controlled. Then, output values of a front oxygen sensor and the rear oxygen sensor are respectively compared to first and second threshold values. If the output value of the front oxygen sensor is greater than the first threshold value, and the output value of the rear oxygen sensor is less than the second threshold value, it is determined that the rear oxygen sensor has failed. The portions of *Yook* cited by the Examiner (e.g., paragraphs 0020, 0023, 0027 and figure 2) disclose details regarding this method.

Thus, *Yook* teach a method for determining whether a particular sensor has failed, not for determining a type of a sensor, as recited in Applicants' claims. More particularly, *Yook* does not teach anything about determining whether or not a sensor is a multiplex output type sensor, which is a sensor having at least two different outputs that are multiplexed, as now recited in Applicants' claims. *Yook* fails to teach anything about a multiplex output sensor at all, much less determining whether a particular sensor is or is not multiplex output type sensor.

Faymon also does not teach these limitations of Applicants' amended claims.

For at least these reasons, Applicants respectfully submit that amended independent Claims 1, 6, and 11 are allowable over the cited references. Therefore, Applicants respectfully request reconsideration and allowance of amended Claims 1, 6, and 11, and all claims that depend therefrom.

Association of Customer Number and Change of Correspondence Address

Applicants respectfully request that all papers pertaining to the above-captioned patent application be associated with Customer No. **86528**, and direct all correspondence pertaining to this patent application to practitioners at Customer Number **86528**. All telephone calls should be directed to Eric M. Grabski. at 512.457.2030. A Revocation and Power of Attorney will be filed shortly.

CONCLUSION

Applicants have made an earnest effort to place this case in condition for allowance in light of the remarks set forth above. Applicants respectfully request reconsideration of the pending claims.

Applicants believe there are no fees due at this time. However, the Commissioner is hereby authorized to charge any fees necessary or credit any overpayment to Deposit Account No. 50-4871 of King & Spalding L.L.P.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512.457.2030.

Respectfully submitted,
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Date: July 31, 2009

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